WHAT IS CLAIMED IS:

1   1.   An electronically controlled hydraulic brake system,

2   comprising:

3   a pressure increasing pump which increases a brake

4   hydraulic pressure in a brake hydraulic line;

5   a motor connected to the pressure increasing pump,

6   the motor being controlled on the basis of a motor drive

7   current command value to bring the brake hydraulic

8   pressure to a target brake hydraulic pressure;

9   a pressure detector which detects an actual

10 hydraulic pressure in the brake hydraulic line; and

11   a controller connected to the motor and the pressure

12 detector, the controller being arranged

13   to calculate an attainment brake hydraulic pressure,

14 which is a maximum brake hydraulic pressure attained when

15 the motor operates in response to a̶ the motor drive current

16 command value,

17   to obtain a linear compensation executed attainment

18 brake hydraulic pressure by linearly compensating the

19 attainment brake hydraulic pressure using the actual

20 brake hydraulic pressure,

21   to obtain a linear compensation executed motor drive

22 current command value by executing an inverse calculation

23 of t̶h̶e̶ a calculation for obtaining the linear compensation

24 executed attainment brake hydraulic pressure o̶n̶ ̶t̶h̶e̶ ̶b̶a̶s̶i̶s̶

25 o̶f̶ ̶t̶h̶e̶ ̶l̶i̶n̶e̶a̶r̶ ̶c̶o̶m̶p̶e̶n̶s̶a̶t̶i̶o̶n̶ ̶e̶x̶e̶c̶u̶t̶e̶d̶ ̶a̶t̶t̶a̶i̶n̶m̶e̶n̶t̶ ̶b̶r̶a̶k̶e̶

26 h̶y̶d̶r̶a̶u̶l̶i̶c̶ ̶p̶r̶e̶s̶s̶u̶r̶e̶, and

27   to control the motor based on the linear

28 compensation executed motor drive current command value.

1   2.   The electronically controlled hydraulic brake system

2   as claimed in claim 1, wherein the controller is further

3 arranged to set a virtual initial pressure estimated as
4 an initial value of the brake hydraulic pressure, and to
5 obtain the linear compensation executed attainment brake
6 hydraulic pressure by adding the actual brake hydraulic
7 pressure to a value obtained by subtracting the virtual
8 initial pressure from the attainment brake hydraulic
9 pressure.

1 3.   The electronically controlled hydraulic brake system
2 as claimed in claim 2, wherein the controller is further
3 arranged to obtain an ideal flow rate of brake fluid by
4 the pressure increasing pump, and to obtain the linear
5 compensation executed attainment brake hydraulic pressure
6 from the ideal flow rate and the actual brake hydraulic
7 pressure.

1 4.   The electronically controlled hydraulic brake system
2 as claimed in claim 3, wherein the controller is further
3 arranged to obtain the ideal flow rate using a flow rate
4 equation based on fluid dynamics and to obtain the linear
5 compensation executed attainment brake hydraulic pressure
6 by executing an inverse calculation of the flow rate
7 equation.

1 5.   The electronically controlled hydraulic brake system
2 as claimed in claim 4, wherein a flow rate coefficient in
3 the flow rate equation is a fixed value.

1 6.   The electronically controlled hydraulic brake system
2 as claimed in claim 4, wherein a flow rate coefficient in
3 the flow rate equation is a variable which is varied
4 according to an unattained pressure between a control

5   start brake hydraulic pressure and a control finish brake
6   hydraulic pressure.

1   7.   The electronically controlled hydraulic brake system
2   as claimed in claim 1, further comprising a pressure
3   decreasing valve which is disposed in the brake hydraulic
4   line and is connected to the controller, the controller
5   controls the pressure decreasing valve to decrease the
6   actual brake hydraulic pressure.

1   8.   The electronically controlled hydraulic brake system
2   as claimed in claim 7, wherein the controller controls
3   the motor when the actual brake hydraulic pressure is to
4   be increased, and controls the pressure decreasing valve
5   when the actual brake hydraulic pressure is to be
6   decreased.

1   9.   An electronically controlled hydraulic brake system
2   which electronically controls a brake hydraulic pressure
3   in a brake hydraulic line for a vehicle by outputting a
4   motor drive current command value to a motor of a
5   pressure increasing pump for increasing the brake
6   hydraulic pressure, the electronically controlled
7   hydraulic brake system comprising:
8   a controller arranged to execute a linear
9   compensation of a maximum brake hydraulic pressure
10 attained when the motor operates in response to a motor
11 drive current command value, and to obtain the motor
12 drive current command value by executing an inverse
13 calculation of ~~the~~ a calculation for obtaining the linear
14 compensation executed maximum brake hydraulic pressure.

1   10. A method of electronically controlling a brake

2   hydraulic pressure in a brake hydraulic line through a

3   control of a motor of a pressure increasing pump which

4   increases the brake hydraulic pressure, the method

5   comprising:

6   calculating an attainment brake hydraulic pressure,

7   which is a maximum brake hydraulic pressure attained when

8   a motor of a pressure increasing pump operates in

9   response to a motor drive current command value;

10   obtaining a linear compensation executed attainment

11   brake hydraulic pressure by linearly compensating the

12   attainment brake hydraulic pressure using an actually

13   detected brake hydraulic pressure in the brake hydraulic

14   line;

15   obtaining a linear compensation executed motor drive

16   current command value by executing an inverse calculation

17   of ~~the~~ a calculation for obtaining the linear compensation

18   executed attainment brake hydraulic pressure ~~on the basis~~

19   ~~of the linear compensation executed attainment brake~~

20   ~~hydraulic pressure~~, and

21   controlling the motor based on the linear

22   compensation executed motor drive current command value.

1   11. An electronically controlled hydraulic brake system

2   which controls a motor of a pressure increasing pump on

3   the basis of a motor drive current command value obtained

4   from a target brake hydraulic pressure to bring the brake

5   hydraulic pressure to the target brake hydraulic pressure,

6   the electronically controlled hydraulic brake system

7   comprising:

8   attainment brake hydraulic pressure calculating

9   means for calculating an attainment brake hydraulic

10 pressure, which is a maximum brake hydraulic pressure

11 attained when the motor drive current command value is

12 applied to the motor;

13   attainment brake hydraulic pressure compensating

14 means for obtaining a linear compensation executed

15 attainment brake hydraulic pressure by linearly

16 compensating the attainment brake hydraulic pressure

17 using an actual brake hydraulic pressure;

18   linear compensation executed motor drive current

19 command value calculating means for obtaining a linear

20 compensation executed motor drive current command value

21 by executing an inverse calculation of the calculation

22 executed at the attainment brake hydraulic pressure

23 compensating means on the basis of the linear

24 compensation executed attainment brake hydraulic

25 pressure; and

26   control means for controlling the motor based on the

27 linear compensation executed motor drive current command

28 value.